

REMARKS

Reconsideration and allowance of the subject application in view of the foregoing amendments and the following remarks is respectfully requested.

Claims 1-8 and 10-19 remain pending. Claim 8 has been amended to incorporate the limitation of cancelled claim 9. Claims 14-19 have been added to secure an appropriate scope of protection to which Applicant is believed entitled. Specifically, claims 14-19 correspond to similar existing claims 2, 6, and 7.

The specification is amended to correct inadvertent typographical errors. No new matter has been introduced through the foregoing amendments.

The rejection of claims 3 and 7 under 35 U.S.C. 112, second paragraph, as being indefinite is hereby traversed.

“The test for definiteness under 35 U.S.C. 112, second paragraph is whether ‘those skilled in the art would understand what is claimed when the claim is read in light of the specification.’” MPEP §2173.02 quoting Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1576, 1 USPQ2d 1081, 1088 (Fed. Cir. 1986). The Examiner is required to review the claims as a whole in light of the specification and determine whether a rejection under 35 U.S.C. 112, second paragraph is appropriate. In addition to identifying the phrase at issue, the Examiner must provide an analysis as to why the phrase used in the claim is vague and indefinite. The Examiner has failed to provide the required analysis of the rejected claim language and the rejection should be withdrawn.

Further, Applicant believes that the claims are sufficiently definite such that a person of ordinary skill in the art would be able to understand the subject matter which applicant regards as the invention. That is, the scope of the claims would be reasonably ascertainable by those skilled in the art and thus, a rejection is inappropriate. For example, with respect to claim 3, because there are only two steps recited, there can be no confusion regarding which steps are to be repeated in accordance with the limitation of claim 3. With respect to claim 7, the highest loaded and lowest loaded subject matter are believed to be inherent properties resulting from the claim 6 load determining subject matter. If the Examiner wishes to pursue changes to the language of claims 3 and 7, the Examiner is respectfully requested to suggest non-objectionable claim language. For either of the above reasons, the rejection should be withdrawn.

The rejection of claims 1, 3, 5-7, and 12-13 under 35 U.S.C. 102(e) as anticipated by Brenner et al. (U.S. Patent 6,658,449 hereafter referred to as Brenner) is hereby traversed. A rejection based on 35 U.S.C. §102 requires every element of the claim to be included in the reference, either directly or inherently. The Examiner has failed to identify all elements of claim 1 as anticipated by the Brenner reference. There are at least two reasons why the Examiner is incorrect.

First, the Examiner fails to identify a disclosure in Brenner of transferring a thread from a source state processor queue to a sink state processor queue if one processor is in a source state and one processor is in a sink state as required by the subject matter of claim 1. The Examiner relies on steps 1140 and 1150 of the flowchart of Figure 11 of Brenner as support; however, neither step anticipates the limitations of claim 1. According to Brenner at column 11, lines 9-12, step 1140 executed by the starvation load balancing device "determines if the time stamp indicates that the unbound thread has been pending in a local run queue for longer than a threshold amount of time." During step 1140, Brenner fails to disclose determining if a processor is in a sink state. Thus, Brenner cannot disclose transferring a thread from a source state processor queue to a sink state processor.

Second, Brenner at column 8, lines 4-6, describes the starvation load balancing approach as "directed to moving unbound threads which have not been dispatched within a predetermined period of time to a global run queue" and not to a sink state processor as claimed in claim 1. That is, there is no requirement in Brenner that at least one processor is in a source state and at least one processor is in a sink state prior to transferring the thread from the queue of a source state processor. In contrast to the subject matter of claim 1, Brenner transfers unbound threads to a global run queue prior to identification of a sink state processor. "[U]ndispatched threads from local run queues may be moved to the global run queue where there is a greater likelihood that they will be assigned to a local run queue for a CPU that may be able to dispatch them." Brenner at column 8, lines 7-10. Step 1150 of Figure 11 of Brenner states that a thread pending for longer than a threshold (step 1140) is requeued to a global run queue as described above and not to a sink state processor. Brenner fails to require at least one processor to be in a source state and at least one processor to be in a sink state prior to transferring a thread. In contrast, the subject matter of claim 1 requires at least one processor to be in a source state and at least one processor to be in a sink state prior to transferring a thread from a queue of a source state processor to a queue of a sink state processor.

For either of the above reasons, claim 1 is patentably distinguishable from Brenner and the rejection should be withdrawn.

Claims 3 and 5-7 depend from claim 1, incorporate further important limitations, and are patentable over Brenner for at least the reasons advanced above with respect to claim 1. The rejection of claims 3 and 5-7 should be withdrawn.

With respect to claim 7, the Examiner-identified portion of Brenner fails to disclose the state of the processor, i.e., source or state, as required by claim 7. The Examiner is requested to identify where in the reference the transfer of a thread from a highest loaded, source state processor to a lowest loaded, sink state processor is disclosed or withdraw the rejection.

Claims 12 and 13 are patentable over Brenner for at least reasons similar to those advanced above with respect to claim 1 and the rejection should be withdrawn.

Amended claim 8 is patentable over Brenner because contrary to the Examiner's assertion Brenner fails to disclose a processor score being a function of the processor state. The Examiner asserts that Brenner at step 1040 of Figure 10 teaches that the processor score is a function of at least a processor state. The Examiner is incorrect. Step 1040 of Brenner describes determining the load factor for the heaviest and lightest loaded local run queues where the load factor is the number of threads on the local run queue. Brenner fails to disclose taking into account the processor state, i.e., sink or source, in determining a score for each processor.

For at least this reason, claim 8 is patentably distinguishable from Brenner and the rejection of claim 8 should be withdrawn.

Claim 10 depends from claim 8, incorporates further important limitations, and is patentable over Brenner for at least the reason advanced above with respect to claim 8. The rejection of claim 10 should be withdrawn.

The rejection of claims 2, 4, and 11 under 35 U.S.C. 103(a) as obvious in view of Brenner is hereby traversed.

With respect to claim 2, the Examiner baldly asserts that one of ordinary skill in the art would recognize that a neither state exists without identifying a reference disclosing a neither state. The Examiner appears to have improperly applied hindsight reasoning based on the present invention to make the asserted modification. Tellingly, the Examiner relies on the instant specification, specifically the first sentence on page 9, as supposed support for the Examiner's assertion. This is incorrect. In accordance with MPEP §2143.01 and Al-Site Corp. v. VSI Int'l

Inc., 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999), the Examiner is requested to identify a teaching, suggestion, or motivation in either reference or to provide an affidavit of facts within the personal knowledge of the Examiner per MPEP §2144.03 providing a motivation or suggestion to one of ordinary skill in the art to make the asserted modification.

Claim 4 depends from claim 1, includes further important limitations, and is patentable over Brenner for at least the reasons advanced above with respect to claim 1. Thus, the rejection of claim 4 should be withdrawn.

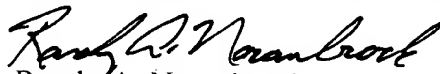
With respect to claim 11, the Examiner asserts without any supporting reference that one of ordinary skill in the art would recognize that the weight of the processor state is essential in determining execution failure of threads in the field of load balancing. The Examiner appears to have improperly applied hindsight reasoning based on the present invention to make the asserted modification. This is incorrect. In accordance with MPEP §2143.01 and Al-Site Corp. v. VSI Int'l Inc., 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999), the Examiner is requested to identify a teaching, suggestion, or motivation in either reference or to provide an affidavit of facts within the personal knowledge of the Examiner per MPEP §2144.03 providing a motivation or suggestion to one of ordinary skill in the art to make the asserted modification.

All objections and rejections having been addressed, it is respectfully submitted that the present application should be in condition for allowance and a Notice to that effect is earnestly solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 08-2025 and please credit any excess fees to such deposit account.

Respectfully submitted,

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